

Notice of Allowability

Application No.

10/616,935

Examiner

Shih-wen Hsieh

Applicant(s)

HIRAI, YASUYUKI

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed on July 11, 2003.
2. ☒ The allowed claim(s) is/are 1-8.
3. ☒ The drawings filed on 11 July 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review.(PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 10-2-03
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

SHIH-WEN HSIEH
PRIMARY EXAMINER

S. H. Hsieh 08-20-04
Shih-wen Hsieh
Primary Examiner
Art Unit: 2861

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

2. Claims 1-8 are allowed.

3. The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claims 1-8 is the inclusion of the limitation and subject matter of a cam and gear member including a cam portion for controlling movement of said cap and a gear portion for transferring drive to said wiper driving gear, said cam and gear member configured so that said gear portion and said wiper driving gear are engaged with each other after said cap has moved to a position where said cap does not interfere with said wiper. It is this limitation and subject matter found in each of the claims, as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

Art Unit: 2861

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,742,863, "Ink ejectability maintenance device, and recording apparatus incorporating the device" issued to Takahashi, 6/2004 teaches a wiping unit (110) and a capping unit (130), they do not overlap each other in the sealing direction of the capping unit. The operations of the wiping unit and the capping unit can be seen in figs.5-16, in which, fig. 6 is the wiping operation, where the capping unit stays under the head (18). In fig. 7, the wiping operation is complete, and the capping unit starts to rise up as the vertical arrow indicated until it completely covers the head as shown in fig. 10. The movement or operation of the wiping unit and the capping unit are controlled by gears 174-178, where gear 178 is a partial tooth gear in mesh with a wiper gear 181, the rotation of the wiper gear moves the wiper 111 (see fig. 6), partial tooth gear corresponds to a cam, because a cam is a device with a special contours used to activate another device, a partial tooth gear has the same function as contoured cam. However, the engagement of the partial tooth gear 178 with wiper gear 181 **before** the cap moved to a position where said cap does not interfere with the wiper.

US 6,550,890 B2, "Ink jet printing apparatus" issued to Saijo, 4/2003 teaches in his figs. 2, 3 and 5 mechanisms (e.g., stepping motor 18; reduction gear 19; pendulum transmission mechanism 21; planetary gear 20 and cam gear 22, driving gear 39; gear mechanism 40; activating mechanism 36, etc.) for driving a cap (29) and a wiper (32, Saijo called it a blade). However, the cap cam (16) which controls the opening and closing of the cap to the head and the cam gear (22), which rotates the cap cam (16) is unrelated to the operation of the wiper, the wiper has the driving power comes from the same stepping motor (18), which is also the driving power for the cap, however, the gear mechanism (40, fig. 5) for moving the wiper across the face of the head is not meshed with any of the gear in the mechanism, which is used to drive the cap.

US 6,371,595 B1, "Ink jet printer" issued to Takemoto et al., 4/2002 teaches in their figs. 5 and 7 a maintenance cam (45) is used to control the operations of wiping and capping, a wiping raising arm (75) is actuated by a cap driving lever (67), the rotation of the cam (45) rotates lever (67) so as to raise caps (35 and 37) and wiper (69), refer to col. 7, line 10+.

US 5,867,185, "Wiper and cap part of an inkjet printer service station" issued to Yun, 2/99 teaches operations of a wiper (611) and cap (621) in his fig. 2, the operations are done by a rotation of a motor (650), the rotational force is transmitted to either the wiper or the cap through mechanisms such as a screw shaft (670); worm wheel (680); and see-saw stand, etc.

A number of ways to operate wipers and caps to carry out their functions exist in the prior art. The above cited three references teach ways to operate the wipers and

Art Unit: 2861

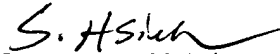
caps, which are close to the instant application, however, still fail to teach the subject matter and features as indicated in the reasons for allowance.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S D Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SHIH-WEN HSIEH
PRIMARY EXAMINER


Shih-wen Hsieh
Primary Examiner
Art Unit 2861

SWH


Aug. 18, 2008